

# Determination of the Factors Affecting Sexual Violence against Women in Turkey: A Population-Based Analysis

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## Research article

**Keywords:** sexual violence, domestic violence, violence against women, intimate partner violence, Turkey

**Posted Date:** July 21st, 2020

**DOI:** <https://doi.org/10.21203/rs.3.rs-39649/v1>

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**Version of Record:** A version of this preprint was published at BMC Women's Health on May 5th, 2021. See the published version at <https://doi.org/10.1186/s12905-021-01333-1>.

# Abstract

**Background:** Sexual violence is among the most threatening type of violence and one of the most investigated by national and international decision makers. The purpose of this study was to detect the factors that affect sexual violence against women in Turkey.

**Methods:** In this study, a micro data set of from the survey titled Research on Domestic Violence against Women conducted by the Hacettepe University Institute of Population Studies was employed. By utilizing binary logistic and probit regression analysis, influential factors for a woman's exposure to sexual violence were detected.

**Results:** Findings obtained from the analysis indicated that a woman's exposure to sexual violence was influenced by a variety of factors such as region, age, level of education, employment, health condition, marital status, number of children as well as exposure to physical, economic, and verbal abuse. In addition, it was found that the level of education, employment status, drug use, infidelity and other variables related to the husband/partner of the women who participated in the survey.

**Conclusion:** Among women residing in rural and less developed regions, there remains a higher probability of exposure to sexual violence. A decrease in the woman's level of education elevated her probability of exposure to sexual violence. An increase in women's age and an increase in the level of education of the woman's husband/partner lowered the probability of the woman's exposure to sexual violence. Among women who had experienced physical, economic, and verbal abuse, there was a higher probability of exposure to sexual violence.

# Introduction

Violence defined as the exertion of physical force upon another person from which there is a strong possibility that murder, injury, psychological damage, or other negative change will result; it is also recognized that deprivation directed toward the perpetrator himself or another person or group upon his willful acts can cause the emergence of such results [1]. Acts of violence can take the form of physical, sexual, psychological, deprivation, or negligence [2]. There is no doubt that sexual violence is one of the most dangerous of these types of violence. It undeniable that, all around the world, women face the risk of physical or sexual abuse by an intimate partner or a different offender [3]. Sexual violence and intimate partner violence can lead to physical injury, deteriorated mental health, and specific chronic physical ailments. These types of violence can even result in handicap and death for some victims [4]. It has been reported that exposure to sexual violence in childhood particularly constitutes a great risk for the repetition of similar problems in adulthood [5].

Sexual violence is a type of domestic violence and mostly emerges in marriage or intimate partnership scenarios [6]. Sexual violence against women and intimate partner violence is a problem that has a serious impact on the health and welfare of a great number of women from all around the world. The relationship between particular societies and the emergence of sexual violence has become a growing field of research in the scientific world in recent years [7].

Sexual violence takes place in all societies on earth, albeit under different definitions [8]. Sexual violence is commonly defined as any attempt at a sexual move or an attempt to start unwanted sexual intercourse, unwelcome sexual comments and advances, forced intercourse that can occur either at the home or the workplace or outside of these domains [2]. Sexual violence has in recent years become a serious global health

problem at the international level and been recognized as a violation of human rights. It can take place in any stage of life including childhood and be inflicted by parents, caretakers, strangers, relatives, and intimate partners. The World Health Organization has labelled it a priority public health concern [9]. Systematic rape, sexual slavery, sexual abuse of mentally or physically disabled women, and forced marriage or cohabitation are a few of these demeaning acts under the umbrella term of sexual violence [10].

Over the last two decades, researchers have become much more interested in violence against women in societies and sexual violence in particular, and they have mostly focused on the health outcomes of such acts of violence. Despite being an action that affects both genders, it is women who are predominantly impacted by sexual violence throughout the world [11]. Victims of sexual violence undergo physical, social, mental, emotional, and sexual problems. Because of its severe psychological and sociological impact on the victim, sexual violence further escalates feelings of helplessness and weakness that can drain the victim's self-esteem and fuel a sense of vulnerability in the face of subsequent sexual violence [8]. From a more general classification, sexual violence results in mental health, reproductive health, behavioral, and social, and fatal consequences for the victim [12]. Expected results are, in the short term, hostility and accusation on the basis of fear and anxiety and, in the long term, sleep disorders, depression, anxiety, obsession, acute stress disorder, mental retardation, and other significant health problems [13]. In addition, since there is forced sex in sexual violence, there is no birth control protection and thus a risk of unintended pregnancies as a result [14, 15]. Forced sex in unprotected form may also transmit sexual infections including HIV/AIDS. Rape can also increase the risk of HIV transmission because of the tearing of the vagina or rectum [12]. Sexual violence and pressure can also lead to gynecologic damage such as vaginal bleeding, chronic pelvic infection, pelvic pain, urinary tract infections, etc. [16]. Sexual violence and pressure exerted on women can also cause other problems such as early-age consensual sexual intercourse, drug and alcohol addiction, multiple sex partners, and a lower rate of taking birth-control pills or using condoms [17]. Moreover, in extramarital affairs, some of the other potential outcomes are failure of victims to form adult relationships, devalued expectations from marriage, and rejection by family and friends. In certain cultures there is even a possibility of beating or murdering the victim to purge the family honor [12].

Globally, around one third of women (35%) are victims of sexual violence by their intimate partner or another offender. On an international level, during their lifetime, 30% of women experience some form of physical or sexual violence by their intimate partner, and, in cases of femicide, 38–50% of these acts are committed by the woman's intimate partner. Importantly, a vast majority of victims (55–95%) choose not to report the violence or to take action to protect their rights [18]. That is why it is also a difficult task to obtain statistical records of sexual violence. Among women between the ages of 16 to 19, risk of facing sexual violence is four times higher than for other age groups; among women between the ages of 18 to 24, the risk of facing sexual violence is three times higher. South Africa ranks at the top of the global list of countries with the highest rates of sexual violence or rape (132.4 incidents per one hundred people). The countries following South Africa with the highest sexual violence and rape incidents are reported to be, in descending the order, Botswana, Lesotho, Eswatini (Swaziland), Bermuda, Sweden, Surinam, Costa Rica, Nicaragua, and Grenada. Turkey (1.5 incident per one hundred thousand people) is placed among the lowest ranks in this list [19].

In Turkey, the laws regarding women's rights and violence against women are noticeably modernized although most women have no idea of their rights. This may be due to the cultural norm that men own women, that manhood is all about violence, and that violence is just ordinary behavior. In addition, since Turkish people commonly advocate Islamic norms that order women to be submissive to men, it is generally accepted that

rebelling against one's husband is a sin for wives [20]. As an effect of tradition and religious norms in Turkey, it is believed that violence, sexuality, and similar domestic matters should be immune to intervention. Since women widely hold the belief that, in marriage, the sexual needs of men must be met, they do not consider acts of sexual violence as criminal acts and never speak openly about these acts anywhere, let alone to judicial authorities [6]. For these reasons, in Turkey, there is a serious void in the data regarding matters of sexual violence. This void, in return, has led to an absence of studies that could offer numeric results.

In a study that was conducted with 1955 college students in İstanbul via a questionnaire, 13.4% of respondents reported to have undergone sexual abuse. 11.3% reported that an offender had touched her body, 4.9% reported that an offender had forced her to engage in sexual intercourse, and 3% reported that they had experienced both forms of assault. 1.8% of the respondents reported an incidence of incest, and 93% of the offenders were male [21]. In a study conducted in Ankara among 1178 women via a questionnaire, 31.3% of respondents claimed to have faced sexual violence from their husband at least once, and 25.8% of respondents claimed to have been physically forced to engage in sexual intercourse; it was also revealed that, compared to the previous year, the ratio of exposure to sexual violence was 15.9% [22]. In a study conducted with 12,795 women in Turkey via a questionnaire, 15% of married women from the ages of 15 to 49 reported to have undergone sexual or physical violence by their husband or intimate partner within the last 12 months, and 6.6% of these women reported being a victim of sexual abuse in childhood [23]. However, in a study conducted among Marmara University students, 88.5% of women reported not having faced any form of sexual violence in their lifetime [24].

Violence against women has long been a research topic in the scientific world and has been investigated in various aspects. In relation to Turkey, compared to other types of violence, sexual violence was relatively weaker in terms of statistical methods or micro data sets. This study aimed to fill this void in literature with the purpose of analyzing sexual violence via more specific variables in addition to micro data sets and demographic variables. In line with this purpose, factors that influence sexual violence against women were modeled for Turkey via a rich data set.

## Methods

### Data Source

In this study, a micro data set from the National Research on Domestic Violence against Women in Turkey Survey conducted by the Hacettepe University Institute of Population Studies in 2008 and 2014 was employed. The National Research on Domestic Violence against Women in Turkey Survey is among the most comprehensive studies executed nationwide to unveil the magnitude, scope, causes, and effects as well as the risk factors for the domestic violence inflicted upon women. The scope of the research entailed households in all residential settlements within the territory of Turkey. In the sample design by National Research on Domestic Violence against Women in Turkey, a weighted, staged, and multi-staged cluster sample approach was used. The research was conducted among women between the ages of 15 and 59 [25, 26].

### Outcome variable

The National Research on Domestic Violence against Women in Turkey Survey directed these questions related to sexual violence to the participating women: "Did your husband or one of your intimate partners exert physical force to have intercourse with you?", "Did you involuntarily engage in sexual intercourse because of fear of

potential threats from your husband or one of your intimate partners?” and “Did your husband or one of your intimate partners force you to perform a sexually demeaning or disgraceful act?” The women's story of facing sexual violence measured by these questions was used to create a dependent variable. If women participating in the research experienced one or many of the above-mentioned cases, she was deemed to be a victim of husband/partner-inflicted sexual violence, but if none of the cases was experienced, she was deemed not to have faced sexual violence. Thus, if a woman faced sexual violence, the dependent variable code 1 was assigned, and, if not, a code 0 was assigned.

### **Independent variables**

In this study investigating sexual violence against women via a questionnaire, questions related to socio-demographic, economic, and domestic violence were directed to participants, and some of the variables thought to be influential were then integrated into the model. Variables of the socio-demographic and economic features of women were survey year (2008, 2014), the women's place of residence (rural, urban), age (15-24, 25-34, 35-44, 45-54, 55 and above), level of education (illiterate, elementary school, secondary school, high school, university), employment (yes, no), marital status (never married, married, widows/divorced/separated), health condition (bad/very bad, not bad, perfect/good), number of children (childless, one child, two or more), and exposure to first-degree relative violence (no, yes). Factors related to the woman's husband/partner were husband/partner's level of education (illiterate, elementary school, secondary school, high school, university), husband/partner's job status (unemployed, public, private), husband/partner's alcohol usage (no, yes), husband/partner's gambling history (no, yes), husband/partner's drug usage (no, yes), husband/partner's infidelity (no, yes), exposure to husband/partner's economic violence (no, yes), exposure to husband/partner's verbal abuse (no, yes), and exposure to husband/partner's physical violence (no, yes).

The region variable is one of the independent variables. On the basis of employing the nomenclature of units for territorial statistics (NUTS) in Turkey, as obligation to establish Development Agencies is present. A national program issued upon the accession to the partnership signed with the EU-mandated formation of NUTS regions was a precondition to establishing development agencies; hence, establishing NUTS regions became imperative. In Turkey, to construct NUTS regions, current geographical regions were disregarded, and regional borders were detected, depending on a multitude of criteria. Population size was one of the most powerful criteria. In addition to population, cultural composition and the development history of cities were also taken into account [27]. Following the nomenclature of units for territorial statistics at Level 1, Turkey was divided into 12 regions. To obtain more significant results from the analysis, some of the regions were unified and then were grouped into eight regions [28]. These regions and cities within these regions are depicted in detail in Table 1.

**Table 1.** Statistical Region Units Classification -Level 1

Code	Level 1	Provinces
TR1	İstanbul	İstanbul
TR2/TR4	West Marmara/East Marmara	Tekirdağ, Edirne, Kırklareli, Balıkesir, Çanakkale, Bursa, Eskişehir, Bilecik, Kocaeli, Sakarya, Düzce, Bolu, Yalova
TR3	Aegean	İzmir, Aydın, Denizli, Muğla, Manisa, Afyonkarahisar, Kütahya, Uşak
TR5/TR7	Western Anatolia/Central Anatolia	Ankara, Konya, Karaman, Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir, Kayseri, Sivas, Yozgat
TR6	Mediterranean	Antalya, Isparta, Burdur, Adana, Mersin, Hatay, Kahramanmaraş, Osmaniye
TR8/TR9	West Blacksea/East Blacksea	Zonguldak, Karabük, Bartın, Kastamonu, Çankırı, Sinop, Samsun, Tokat, Çorum, Amasya, Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane
TRA/TRB	Northeastern Anatolia/East Anatolia	Erzurum, Erzincan, Bayburt, Ağrı, Kars, Iğdır, Ardahan, Malatya, Elazığ, Bingöl, Tunceli, Van, Muş, Bitlis, Hakkâri
TRC	Southeastern Anatolia	Gaziantep, Adıyaman, Kilis, Şanlıurfa, Diyarbakır, Mardin, Batman, Şırnak, Siirt

As explained here, all of the analyzed variables were categorical variables and bi-stable or ordinary scales. Ordinal and nominal variables were described as dummy variables in order to observe the impact of the categories belonging to all the variables that would be integrated into binary logistic regression and binary probit regression models [29].

### Statistical analysis

Survey statistics in Stata 15 (Stata Corporation) were used to account for the complex sampling design and weights. Weighted analysis was performed. In the beginning, frequency and percentages were determined on the basis of stories of exposure to sexual violence by the husband/partners of women taking part in the research. In order to analyze the relationship between women facing sexual violence and independent variables, the chi-square independence test was performed. Next, by administering binary logistic regression and binary probit regression analyses, risk factors influential for the exposure to sexual violence was detected.

## Results

### Characteristics of study participants

In this section, the frequency and percentages of the independent variables to establish the model will be provided and interpreted. In Table 2, influential factors for a woman's exposure to sexual violence and the chi-square test statistics are demonstrated.

**Table 2.** Distributions and Chi-square Test Statistics of the Factors Influencing Women's Exposure to Sexual Violence

Variables		History of facing sexual violence		n (%)	$\chi^2$	P
		No	Yes			
Survey year	2008	9849(62)	1867(71.4)	11716(63.3)	86.62	0.000
	2014	6048(38)	747(28.6)	6795(36.7)		
Region	TR1	1244(7.8)	155(5.9)	1399(7.6)	123.74	0.000
	TR2/TR4	2761(17.4)	314(12)	3075(16.6)		
	TR3	1333(8.4)	184(7)	1517(8.2)		
	TR6	1399(8.8)	215(8.2)	1614(8.7)		
	TR5/TR7	2464(15.5)	458(17.5)	2922(15.8)		
	TR8/TR9	2569(16.2)	393(15)	2962(16)		
	TRC	1449(9.1)	285(10.9)	1734(9.4)		
	TRA/TRB	2678(16.8)	610(23.3)	3288(17.8)		
Place of residence	Rural	4383(27.6)	775(29.6)	5158(27.9)	4.82	0.003
	Urban	11514(72.4)	1839(70.4)	13353(72.1)		
Age	15-24	2541(16)	254(9.7)	2795(15.1)	124.77	0.000
	25-34	5082(32)	773(29.6)	5855(31.6)		
	35-44	4189(26.4)	692(26.5)	4890(26.4)		
	45-54	2984(18.8)	646(24.7)	3630(19.6)		
	55+	1092(6.9)	249(9.5)	1341(7.2)		
Level of education	Illiterate	2374(14.9)	636(24.3)	3010(16.3)	318.11	0.000
	Elementary school	7599(47.8)	1387(53.1)	8986(48.6)		
	Secondary school	1586(10)	234(9)	1820(9.8)		
	High school	2076(17)	269(10.3)	2975(16.1)		
	University	1631(10.3)	86(3.3)	1717(9.3)		
Employment	No	12571(79.1)	2064(79)	14635(79.1)	0.019	0.890
	Yes	3326(20.9)	550(21)	3876(20.9)		
Marital status	Never married	1405(8.8)	28(1.1)	1433(7.7)	425.59	0.000
	Married	13689(86.1)	2236(85.5)	15925(86)		
	Widows /divorced/separated	803(5.1)	350(13.4)	1153(6.2)		

<b>Health condition</b>	Perfect/good	7341(46.2)	725(27.7)	8066(43.6)	503.99	0.000
	Not bad	6533(41.1)	1177(45)	7710(41.7)		
	Bad/very bad	2018(12.7)	711(27.2)	2729(14.7)		
<b>Number of children</b>	Childless	2517(15.8)	172(6.6)	2689(14.5)	226.73	0.000
	One child	2597(16.3)	304(11.6)	2901(15.7)		
	Two or more children	10783(67.8)	2138(81.8)	12921(69.8)		
<b>First-degree relative violence</b>	No	14258(89.7)	2104(80.6)	16362(88.4)	183.29	0.000
	Yes	1637(10.3)	508(19.4)	2145(11.6)		
<b>Husband/partner's level of education</b>	Illiterate	538(3.4)	191(7.3)	729(3.9)	343.68	0.000
	Elementary school	6434(40.5)	1376(52.7)	7810(42.2)		
	Secondary school	2288(14.4)	404(15.5)	2692(14.6)		
	High school	4044(25.5)	438(16.8)	4482(24.2)		
	University	2578(16.2)	204(7.8)	2782(15)		
<b>Husband/partner's job status</b>	Unemployed	2831(17.8)	572(21.9)	2403(18.4)	43.37	0.000
	Public	2404(15.1)	294(11.2)	2698(14.6)		
	Private	10647(67)	1748(66.9)	12395(67)		
<b>Husband/partner's alcohol usage</b>	No	12770(80.4)	1897(72.6)	14667(79.3)	82.97	0.000
	Yes	3120(19.6)	717(27.4)	3837(20.7)		
<b>Husband/partner's gambling history</b>	No	15661(98.6)	2456(94)	18117(97.9)	232.762	0.000
	Yes	226(1.4)	157(6)	383(2.1)		
<b>Husband/partner's drug usage</b>	No	15831(99.7)	2576(98.6)	18407(99.6)	65.180	0.000
	Yes	45(0.3)	37(1.4)	82(0.4)		
<b>Husband/partner's infidelity</b>	No	14819(93.3)	2028(77.6)	16847(91.1)	681.902	0.000
	Yes	1059(6.7)	584(22.4)	1643(8.9)		
<b>Exposure to economic violence</b>	No	11966(76.6)	1211(46.5)	13177(72.3)	1016.10	0.000
	Yes	3646(23.4)	1395(53.5)	5041(27.7)		
<b>Exposure to verbal abuse</b>	No	10141(63.8)	365(14)	10506(56.8)	2270.96	0.000
	Yes	5956(36.2)	2249(86)	8005(43.2)		
<b>Exposure to physical violence</b>	No	11276(70.9)	451(17.3)	11727(63.4)	2785.97	0.000

Yes

4621(29.1)

2163(82.7)

6784(36.6)

Based on the findings displayed in Table 2, participants who took part in the survey in 2008 constituted 63.3% of the sample. Women who participated in the questionnaire from western Marmara/Eastern Marmara (TR2/TR4) constituted 16.6% of the sample; participants from northeastern Anatolia/East central Anatolia (TRA/TRB) constituted 17.8% of the sample. Women residing in rural represented 27.9% of the sample. Women aged between 25 to 34 made up 31.6% and women aged 55 and above made up 7.2% of the sample. Illiterate women constituted 16.3% of the sample and university graduates constituted 9.3% of the sample. Women with a regular job made up 79.1% of the sample. Married women represented 86% of the sample. Women with a perfect/good health condition formed 43.6% of the sample and women with a bad/very bad health condition formed 14.7% of the sample. Childless women represented 14.5% of the sample, women with two or more children represent 69.8% of the sample. Women who experienced first-degree relative violence represented 11.6% of the sample. Except for employment, the chi-square test statistics of all the variables were detected to be significant.

Women whose husband/partner were illiterate made up 3.9% of the sample, and women whose husband/partner were elementary school graduates made up 42.2% of the sample. Women whose husband/partner were unemployed represented 18.4% of the sample, and women whose husband/partner worked in the private sector represented 67% of the sample. Women whose husband/partner drank alcohol constituted 20.7% of the sample, and women whose husband/partner gambled constitute 2.1% of the sample. Women whose husband/partner were unfaithful constitute 8.9% of the sample. Women with a history of experiencing economic violence form 27.7% of the sample. Women with a history of experiencing verbal abuse formed 43.2% of the sample. Women with a history of experiencing physical violence represented 36.6% of the sample.

### Multivariate analyses

In order to detect the factors that influence the likelihood of women experiencing sexual violence in this study, binary logistic regression and binary probit regression models were employed. The results of the estimated model may be seen in Table 3.

Table 3 reveals that variables such as the survey year, the region (TR5/TR7, TR8/TR9, TRA/TRB)), the place of residence, age (25-24, 35-44), the level of education (illiterate), employment status, marital status (never married, married), health condition (perfect/good, not bad), number of children (one child), and exposure to violence from first-degree relatives were significant. Likewise, the husband/partner's level of education (illiterate, high-school), the husband/partner's job status (unemployed), the husband/partner's history of drug usage, the husband/partner's history of infidelity, exposure to husband/partner's economic violence, exposure to husband/partner's verbal abuse, and exposure to husband/partner's physical violence are other significant variables.

**Table 3.** Estimated Model Results of the Influential Factors in Women's Exposure to Sexual Violence

Variables	Binary Logistic Regression				Binary Probit Regression			
	$\beta$	Std. Error	95% CI		$\beta$	Std. Error	95% CI	
			Lower	Upper			Lower	Upper
<b>Survey year (reference category: 2008)</b>								
2014	-0.303 <sup>a</sup>	0.066	-0.432	-0.174	-0.171 <sup>a</sup>	0.036	-0.242	-0.100
<b>Region (reference category: TR1)</b>								
TR2/TR4	0.069	0.128	-0.181	0.319	0.037	0.069	-0.099	0.173
TR3	0.191	0.140	-0.084	0.466	0.106	0.076	-0.044	0.255
TR6	0.091	0.134	-0.173	0.355	0.044	0.074	-0.100	0.189
TR5/TR7	0.249 <sup>b</sup>	0.123	0.008	0.490	0.145 <sup>b</sup>	0.068	0.012	0.278
TR8/TR9	0.261 <sup>b</sup>	0.127	0.011	0.510	0.144 <sup>b</sup>	0.069	0.008	0.280
TRC	0.203	0.134	-0.059	0.465	0.124	0.073	-0.020	0.268
TRA/TRB	0.501 <sup>a</sup>	0.124	0.258	0.744	0.283 <sup>a</sup>	0.068	0.150	0.417
<b>Place of residence (reference category: rural)</b>								
Urban	-0.112 <sup>c</sup>	0.066	-0.242	0.018	-0.063 <sup>c</sup>	0.036	-0.134	0.009
<b>Age (reference category: 15-24)</b>								
25-34	-0.236 <sup>c</sup>	0.127	-0.484	0.013	-0.122 <sup>c</sup>	0.069	-0.257	0.012
35-44	-0.305 <sup>b</sup>	0.136	-0.571	-0.038	-0.162 <sup>b</sup>	0.074	-0.308	-0.016
45-54	-0.085	0.143	-0.365	0.195	-0.039	0.077	-0.190	0.113
55+	-0.137	0.167	-0.464	0.191	-0.071	0.091	-0.249	0.108
<b>Level of education (reference category: university)</b>								
Illiterate	0.374 <sup>c</sup>	0.203	-0.024	0.772	0.206 <sup>c</sup>	0.107	-0.004	0.416
Elementary school	0.266	0.188	-0.102	0.634	0.151	0.098	-0.041	0.343
Secondary school	0.206	0.204	-0.194	0.606	0.124	0.108	-0.087	0.335
High school	0.150	0.190	-0.222	0.523	0.081	0.099	-0.112	0.274
<b>Employment (reference category: no)</b>								
Yes	0.190 <sup>b</sup>	0.077	0.039	0.341	0.103 <sup>b</sup>	0.043	0.019	0.187
<b>Marital status (reference category: widows/divorced/separated)</b>								
Never married	-1.650 <sup>a</sup>	0.335	-2.306	-0.994	-0.846 <sup>a</sup>	0.162	-1.164	-0.528

Married	-0.422 <sup>a</sup>	0.105	-0.628	-0.216	-0.246 <sup>a</sup>	0.060	-0.364	-0.129
<b>Health condition (reference category: bad/very bad)</b>								
Perfect/good	-0.293 <sup>a</sup>	0.090	-0.469	-0.116	-0.161 <sup>a</sup>	0.050	-0.259	-0.063
Not bad	-0.225 <sup>a</sup>	0.081	-0.383	-0.066	-0.123 <sup>a</sup>	0.046	-0.213	-0.033
<b>Number of children (reference category: childless)</b>								
One child	-0.279 <sup>c</sup>	0.151	-0.574	0.016	-0.150 <sup>c</sup>	0.080	-0.307	0.006
Two or more children	0.016	0.136	-0.251	0.283	0.007	0.073	-0.136	0.149
<b>Exposure to first-degree relative violence (reference category: no)</b>								
Yes	0.307 <sup>a</sup>	0.085	0.141	0.473	0.176 <sup>a</sup>	0.048	0.081	0.270
<b>Husband/partner's level of education (reference category: elementary school)</b>								
Illiterate	0.438 <sup>a</sup>	0.138	0.168	0.707	0.236 <sup>a</sup>	0.077	0.085	0.386
Secondary school	-0.053	0.092	-0.234	0.127	-0.024	0.051	-0.125	0.076
High school	-0.202 <sup>b</sup>	0.092	-0.383	-0.022	-0.115 <sup>b</sup>	0.050	-0.213	-0.016
University	-0.127	0.140	-0.401	0.147	-0.078	0.075	-0.225	0.068
<b>Husband/partner's job status (reference category: public)</b>								
Unemployed	0.308 <sup>b</sup>	0.119	0.075	0.541	0.176 <sup>a</sup>	0.065	0.048	0.303
Private	0.106	0.103	-0.097	0.309	0.058	0.056	-0.051	0.167
<b>Husband/partner's alcohol usage (reference category: no)</b>								
Yes	0.069	0.077	-0.082	0.220	0.036	0.043	-0.048	0.119
<b>Husband/partner's gambling history (reference category: no)</b>								
Yes	0.216	0.156	-0.089	0.521	0.146	0.091	-0.033	0.325
<b>Husband/partner's drug usage (reference category: no)</b>								
Yes	0.730 <sup>a</sup>	0.281	0.179	1.281	0.435 <sup>a</sup>	0.167	0.108	0.762
<b>Husband/partner's infidelity (reference category: no)</b>								
Yes	0.493 <sup>a</sup>	0.085	0.327	0.660	0.299 <sup>a</sup>	0.050	0.202	0.397
<b>Exposure to economic violence (reference category: no)</b>								
Yes	0.728 <sup>a</sup>	0.065	0.601	0.855	0.402 <sup>a</sup>	0.036	0.332	0.473
<b>Exposure to verbal abuse (reference category: no)</b>								
Yes	1.394 <sup>a</sup>	0.086	1.226	1.563	0.710 <sup>a</sup>	0.042	0.628	0.792

Exposure to physical violence (reference category: no)								
Yes	1.450 <sup>a</sup>	0.082	1.289	1.611	0.766 <sup>a</sup>	0.041	0.686	0.846
<b>Constant</b>	-3.550 <sup>a</sup>	0.316	-4.169	-2.932	-1.914 <sup>a</sup>	0.167	-2.242	-1.586

<sup>a</sup>p<0.01, <sup>b</sup>p<0.05, <sup>c</sup>p<0.10

### Average direct elasticities

Marginal impacts of the factors influencing women's history of sexual violence may be seen in Table 4. In this model, the existence of multicollinearity between independent variables was also checked, and it was suggested that a variance inflation factor (VIF) value of five and above caused a moderate level of multicollinearity, and a level of 10 and above value caused a high level of multicollinearity [29]. The VIF results displayed in Table 4 indicated that there was no variable that could cause a multicollinearity problem among the variables.

In Table 4, goodness of fit of estimated models may be seen. The goodness of fit of the estimated models revealed that results obtained from both models were identical. The success of the accurate classification of the binary logistics and binary probit models was computed as 86.94% and 86.83%, respectively. Although fitness criteria for the model provided similar results for both models, they were in acceptable range for this kind of model.

**Table 4.** Average Elasticity Values of the Factors Influential in Women's Exposure to Sexual Violence

Variables	Binary Logistic Regression		Binary Probit Regression		VIF	1/VIF
	Elasticity (%)	Std. Error	Elasticity (%)	Std. Error		
<b>Survey year (reference category: 2008)</b>						
2014	-26.466 <sup>a</sup>	0.058	-34.445	0.074	1.040	0.958
<b>Region (reference category: TR1)</b>						
TR2/TR4	6.083	0.112	7.559	0.142	2.720	0.367
TR3	16.740	0.123	21.345	0.154	1.960	0.511
TR6	7.997	0.118	9.027	0.151	1.990	0.502
TR5/TR7	21.717 <sup>b</sup>	0.108	29.054 <sup>b</sup>	0.137	2.650	0.377
TR8/TR9	22.737 <sup>b</sup>	0.111	28.876 <sup>b</sup>	0.141	2.710	0.369
TRC	17.757	0.117	24.915	0.149	2.160	0.463
TRA/TRB	43.159 <sup>a</sup>	0.108	55.149 <sup>a</sup>	0.136	2.930	0.342
<b>Place of residence (reference category: rural)</b>						
Urban	-9.691 <sup>c</sup>	0.057	-12.385	0.071 <sup>c</sup>	1.140	0.874
<b>Age (reference category: 15-24)</b>						
25-34	-20.356 <sup>c</sup>	0.109	-24.064 <sup>c</sup>	0.134	3.100	0.323
35-44	-26.390 <sup>b</sup>	0.117	-32.166 <sup>b</sup>	0.146	3.320	0.301
45-54	-7.295	0.122	-7.462	0.149	3.140	0.318
55+	-11.750	0.143	-13.766	0.177	2.050	0.487
<b>Level of education (reference category: university)</b>						
Illiterate	32.711 <sup>c</sup>	0.179	41.427 <sup>c</sup>	0.220	4.320	0.231
Elementary school	23.362	0.167	30.789	0.203	5.730	0.175
Secondary school	18.144	0.181	25.321	0.222	2.490	0.402
High school	13.288	0.169	16.700	0.205	2.800	0.357
<b>Employment (reference category: no)</b>						
Yes	16.433 <sup>b</sup>	0.066	20.273 <sup>b</sup>	0.083	1.150	0.872
<b>Marital status (reference category: widows/divorced/separated)</b>						
Never married	-148.104 <sup>a</sup>	0.314	-178.415 <sup>a</sup>	0.386	3.080	0.324
Married	-35.862 <sup>a</sup>	0.088	-45.788 <sup>a</sup>	0.106	2.150	0.466
<b>Health condition (reference category: bad/very bad)</b>						

Perfect/good	-25.292 <sup>a</sup>	0.078	-31.430 <sup>a</sup>	0.096	2.670	0.375
Not bad	-19.346 <sup>a</sup>	0.069	-23.895 <sup>a</sup>	0.088	2.370	0.422
<b>Number of children (reference category: childless)</b>						
One child	-24.535 <sup>c</sup>	0.132	-30.591 <sup>c</sup>	0.161	2.820	0.354
Two or more children	1.415	0.118	1.290	0.143	3.790	0.264
<b>Exposure to first-degree relative violence (reference category: no)</b>						
Yes	26.417 <sup>a</sup>	0.072	33.965 <sup>a</sup>	0.091	1.040	0.960
<b>Husband/partner's level of education (reference category: elementary school)</b>						
Illiterate	37.007 <sup>a</sup>	0.114	43.925 <sup>a</sup>	0.137	1.160	0.863
Secondary school	-4.641	0.080	-4.767	0.101	1.230	0.813
High school	-17.698 <sup>b</sup>	0.081	-23.014 <sup>b</sup>	0.101	1.530	0.652
University	-11.069	0.122	-15.610	0.151	2.110	0.473
<b>Husband/partner's job status (reference category: public)</b>						
Unemployed	26.696 <sup>b</sup>	0.104	34.702 <sup>a</sup>	0.130	2.150	0.465
Private	9.286	0.091	11.719	0.114	2.200	0.455
<b>Husband/partner's alcohol usage (reference category: no)</b>						
Yes	5.999	0.067	7.050	0.084	1.180	0.850
<b>Husband/partner's gambling history (reference category: no)</b>						
Yes	18.574	0.132	28.190	0.171	1.070	0.934
<b>Husband/partner's drug usage (reference category: no)</b>						
Yes	60.976 <sup>a</sup>	0.225	78.987 <sup>a</sup>	0.275	1.030	0.971
<b>Husband/partner's infidelity (reference category: no)</b>						
Yes	42.132 <sup>a</sup>	0.071	56.495 <sup>a</sup>	0.089	1.150	0.869
<b>Exposure to economic violence (reference category: no)</b>						
Yes	62.957 <sup>a</sup>	0.056	76.978 <sup>a</sup>	0.068	1.160	0.866
<b>Exposure to verbal abuse (reference category: no)</b>						
Yes	124.329 <sup>a</sup>	0.079	137.174 <sup>a</sup>	0.085	1.440	0.695
<b>Exposure to physical violence (reference category: no)</b>						
Yes	128.457 <sup>a</sup>	0.074	144.131 <sup>a</sup>	0.077	1.510	0.662

<b>Pseudo R<sup>2</sup></b>	0.274	0.275
<b>Cox-Snell/M</b>	0.201	0.202
<b>AIC</b>	10892.562	10884.229
<b>BIC</b>	11197.012	11188.679
<b>Log-likelihood</b>	-5407.281	-5403.114
<b>Classification success</b>	86.94	86.83
<b>P-value</b>	0.000	0.000
<b>N</b>	18150	18150

<sup>a</sup>p<0.01, <sup>b</sup>p<0.05, <sup>c</sup>p<0.10

According to the binary logistic and binary probit regression models presented in Table 4, when other variables are constant, compared to women participating in the study in 2008, women participating in the study in 2014 had a 26.47% and 34.45% lower risk, respectively, in terms of facing sexual violence from their husband/partner. A woman residing in the TR5/TR7 regions had, compared to women in the TR1 region, a higher likelihood of facing sexual violence by 21.72% and 29.05%, respectively. A woman residing in the TR8/TR9 regions have, compared to women in the TR1 region, a higher likelihood of facing sexual violence by 22.74% and 28.88%, respectively. A woman residing in the TRA/TRB regions had, compared to women in the TR1 region, a higher likelihood of facing sexual violence by 43.16% and 55.15%, respectively. A woman residing in rural had, compared to women in urban, a higher likelihood of facing sexual violence by 9.7% and 12.4%, respectively. Compared to women within the age range of 15-24, women within the age range of 25-34 had a lower likelihood of facing sexual violence by 20.4% and 24.1%, respectively. Compared to women within the age range of 15-24, women within the age range of 35-44 had a lower likelihood of facing sexual violence by 26.4% and 32.2%, respectively. Compared to university graduates, illiterate women had a greater likelihood of facing sexual violence by 32.7% and 41.4%, respectively. Compared to non-working women, working women were more likely to face sexual violence by 16.4% and 20.3%, respectively. Married women were less likely to face sexual violence by 35.86% and 45.79%, respectively, compared to women having deceased spouse, living divorced/separated. Compared to women with bad/very bad health condition, women with perfect/good health condition are less likely to face sexual violence respectively by 25.3% and 31.4%. Compared to women with bad/very bad health conditions, women with better than bad health conditions were less likely to face sexual violence by 19.3% and 23.9%, respectively. Compared to women with no children, women who had one child were less likely to face sexual violence by 24.5% and 30.6%, respectively. Compared to others, women who were victimized by violence from first-degree relatives were more likely to face sexual violence by 26.4% and 34%, respectively.

Table 4 shows that women whose husband/partner was illiterate were more likely to face sexual violence by 37.01% and 43.93%, respectively, compared to women whose husband/partner was an elementary school graduate. Compared to women whose husband/partner was an elementary school graduate, women whose husband/partner was a high-school graduate were less likely to face sexual violence by 17.7% and 23.01%, respectively. Compared to women whose husband/partner was employed at a public institution, women whose

husband/partner was unemployed were more likely to face sexual violence by 26.7% and 34.7%, respectively. Compared to others, women whose husband/partner took drugs were more likely to face sexual violence by 60.98% and 78.99%, respectively. Compared to others, women whose husband/partners were unfaithful were more likely to face sexual violence by 42.13% and 56.5%, respectively. Compared to others, women victimized by economic violence from their husband/partners were more likely to face sexual violence by 62.96% and 76.98%, respectively. Women victimized by verbal abuse from their husband/partner were more likely to face sexual violence by 124.33% and 137.17%, respectively. In the same vein, compared to others, women victimized by physical violence from their husband/partners were more likely to face sexual violence by 128.46% and 144.13%, respectively.

## Discussion

In this study, factors that influence sexual violence against women in Turkey were investigated by employing binary logistic and binary probit regression analyses. According to the results of the analyses, women who participated in the questionnaire in 2014 were less likely to face sexual violence than women in the 2008 questionnaire. In the six-year interval there had been a myriad of nationwide changes in the fields of technology, education, and law, and it is thought that these positive changes could have been influential factors in the final results.

Based on the model estimation results, women living in the western Anatolia/Central Anatolia regions, the western Black Sea/Eastern Black Sea regions, and the Northeastern Anatolia/East Central Anatolia regions had a greater likelihood of facing sexual violence than women living in Istanbul. In parallel with these results, in a study conducted in Turkey, it was reported that women living in eastern and southeastern regions were more likely to face sexual violence than women living in western regions [23]. It is generally accepted that the above-mentioned regions experience a lower level of development than Istanbul.

It was determined that women living in urban were less likely to face sexual violence than women living in rural. Easier access of urban women to the internet, newspapers, TV, and similar media outlets and a higher awareness of their legal rights and the presence of these conditions for most of their husbands/partners could also be factors behind this conclusion. In a comparative study of 17 Sub-Saharan countries, it was determined that living in rural increased the likelihood that female subjects would experience violence [30]. In a Togo-based study among married women, the female living in cities were determined to have a lower likelihood of experiencing sexual violence [31].

Based on the age variable, it emerged that women within the age ranges of 25–34 and 35–44 were less likely to experience sexual violence than women within the age range of 15–24. In a USA-based study, an increase in age was reported to move in parallel with a lowering of the risk of sexual violence [32]. Furthermore, in a different study in the USA, it was determined that younger women were at a higher risk for rape [33].

In terms of the level of education variable, it was determined that illiterate women were more likely to experience sexual violence than women who were university graduates. In parallel with this finding, a study in Nepal determined that uneducated women were at a greater risk for sexual violence from their intimate partners [34]. In a study in Serbia, it was determined that women with a lower level of education were more likely to face physical

or sexual violence [35]. Findings from a study conducted in various regions of India indicated that a higher level of education lessens the possibility of violence and sexual abuse by their intimate partners [36].

Working women were more likely to face sexual violence compared to nonworking women. In parallel with this result, a study in Zimbabwe indicated that working women were more likely to be forced into sexual intercourse by their partners than nonworking women [37]. Similarly, a study in Indonesia indicated that women with financial independence were more prone to experience sexual violence [38]. This suggests that the fact that a working woman has financial freedom could be a driving force for the jealousy of a husband/partner already inclined to violence. Women who are empowered by education, employment, etc. may resist patriarchal norms, thereby causing some men to resort to violence in an attempt to restore lost manhood [2].

Women who were never married or were married were less likely to face sexual violence than women who were widows/divorced/separated. Echoing this finding, a study based in the U.S., revealed that divorced and separated women had greater likelihood of exposure to sexual violence than married women. [32]. It is unlikely that married men would practice sexual violence because, in most instances, marriage is based on mutual consent [39]. Nonetheless, although sex is the legal right of partners in a marriage, initiating intimacy without the consent of one partner is recognized as a crime worldwide.

Women with one child were less likely to face sexual violence than women with no children. In parallel with this result, a study in Nepal claimed that the absence of a child in a family increased the likelihood of a woman's exposure to sexual and intimate partner violence [34]. It can be said that children form a noteworthy bond between partners, and, as these bonds become more firmly cemented, partners naturally treat each other more respectfully.

Women whose husband/partners were illiterate faced a greater possibility of sexual violence than women whose husband/partners were elementary school graduate. Furthermore, women whose husband/partners were high school graduates faced a lower possibility of sexual violence than women whose husband/partners were elementary school graduates. In a study in Indonesia, it was concluded that a woman whose husband had less than nine years of education experienced a greater possibility of physical and sexual violence [38]. In addition, a study in Serbia revealed that the lower the husband/partner's level of education was, the higher the risk of physical or sexual violence risk for the woman. [35]. A study in Ankara/Turkey concluded that, as partners' level of education climbed, an inverse fall was witnessed in the frequency of a woman's exposure to sexual violence [22]. As is clearly seen here, uneducated husband/partners were more inclined to commit sexual violence; thus is evident that education plays vital role in the prevention of violence against women.

It is highly probable that women whose husband/partners are unemployed are more likely experience sexual violence. In a study conducted in the USA, it was detected that unemployment directly correlated with sexual violence and alcohol and drug use which further escalated physical and sexual violence [40]. It is safe to argue that psychological problems due to unemployment combined with various factors can fuel sexual violence; thus, governments should also consider these potential effects in making employment decisions.

Women whose husband/partners took drugs were more likely to face sexual violence. In a study in the USA, addictive drugs like heroin were found to cause more terrifying outcomes when it came to sexual assault. [41]. Likewise, in a study conducted in Serbia, it was determined that women whose husband/partners took drugs

were more likely to face sexual or physical violence [35]. Thus, it is evident that support of the Ministry of Health to stop drug use and deterrent measures taken by police forces and legal bodies to prevent drug use are vital.

Women whose husbands/partners were unfaithful were more likely to face sexual violence than women whose husbands/partners were faithful. In a study conducted in Indonesia, it was determined that women with unfaithful husband/partners were exposed to higher rates of sexual violence [38]. Additionally, a Vietnam-based study revealed that women with unfaithful husband/partners were more prone to experiencing several types of violence including sexual violence [42]. In a study in Turkey, it was determined that women with unfaithful husband/partners were exposed to nearly twice the rate of sexual violence [23]. Thus, it is vital that the Ministry of Family and Society policies should increase the number seminars that emphasize the value of family life and faithfulness between partners and organize relevant programs in media outlets.

In addition, women who faced economic, verbal, physical abuse and violence from first-degree relatives were more prone to experience sexual violence than women who had never experienced such forms of violence. Sexual violence, in most instances, emerges in connection with psychological and physical violence [43]. According to results obtained from a study in Ankara, Turkey, 57.6% of women who were exposed to sexual violence had also been subjected to physical violence, 84.5% had also been subjected to economic violence, and 72.5% had also been subjected to emotional violence [22]. Further to this, it was reported that the witnessing of physical violence in the past elevated the risk for exposure to sexual violence; hence, it was concluded that violence against women is indeed a unity and, regardless of its form, violence in any form is part of a chain reaction that leads to violence in multiple forms.

## Conclusion

As these findings indicate, there has been a decrease in women's exposure to sexual violence in recent years. Women residing in rural and less-developed regions are at a greater risk for exposure to sexual violence. An increase in age corresponds to a lower likelihood of sexual violence exposure. A lower level of education means a higher risk for a woman's exposure to sexual violence. Working women face greater ratios of sexual violence. Women with one child are less likely to face sexual violence. The higher the husband/partner's higher level of education the lower the likelihood of a woman's exposure to sexual violence. Women are more likely to be exposed to sexual violence if their husband/partner takes drugs. Women whose husband/partner is unemployed are more likely to be exposed to sexual violence. Women whose husband/partner are unfaithful are more likely to face sexual violence. Women who have been victimized by violence from first-degree relatives and who have experienced physical, economic, and verbal abuse are more likely to experience sexual violence.

This study was of women living in Turkey and used data collected on two different dates. It is suggested that the obtained findings can light the way for other studies that harness different econometric models and different variables through employing micro data sets on sexual violence in Turkey. In relation to the envisaged measures to stop violence against women, these findings can also offer guidance to concerned governmental bodies. By forming multivariate models that cover all of the aforementioned types of violence, analyzes could be conducted in connection with those types of violence in the following decades.

This study has a number of limitations. Firstly, data in the study were secondary data. The variables essential for performing statistical analyses consisted of the variables in the data set, but some of the variables missing in

the data set, such as profession, home ownership status, etc., could not be included in the analysis. Secondly, since the data is was cross-sectional, the definite causal relationship between sexual violence and the related factors could not be inferred. Lastly, collected the data regarding women's history of exposure to sexual violence were the subjective responses of women; thus, there was a decided risk that any data obtained by this method could be biased.

## **Abbreviations**

VIF: Variance Inflation Factor; Std. Error: Standard error

## **Declarations**

## **Availability of data and materials**

The authors are pleased to share the dataset upon receiving request.

### **Ethics approval and consent to participate**

This study has accomplished by using data of National Research on Domestic Violence Against Women in Turkey conducted by Turkey Statistical Institute. Therefore, ethical approval was not required for this study.

### **Consent for publication**

Not applicable.

### **Competing interests**

Authors do not have any competing interested to report. Additionally, authors had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

## **Funding**

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## **Authors' contributions**

ÖA conceived and led the design and development of the study proposal. ÖA and HHT supervised data collection, led the data analysis and drafting the manuscript. HHT made substantial contributions to the conceptualization and design of the study, data interpretations and writing the manuscript. All authors read and approved the final version of the manuscript.

## **Acknowledgements**

The authors would like to thank the Turkish Statistical Institute for the data. The views and opinions expressed in this manuscript are those of the authors only and do not necessarily represent the views, official policy, or position of the Turkish Statistical Institute.

## References

1. WHO. **WHO Global Consultation on Violence and Health. Violence: a public health.** In. Geneva. Switzerland: World Health Organization; 1996.
2. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *The Lancet*. 2002;360(9339):1083–8.
3. Kiss L, Schraiber LB, Heise L, Zimmerman C, Gouveia N, Watts C. Gender-based violence and socioeconomic inequalities: Does living in more deprived neighbourhoods increase women’s risk of intimate partner violence? *Soc Sci Med*. 2012;74(8):1172–9.
4. Breiding MJ, Smith SG, Basile KC, Walters ML, Chen J, Merrick MT. Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization—National Intimate Partner and Sexual Violence Survey, United States, 2011. *Am J Public Health*. 2015;105(4):e11–2.
5. Smith PH, White JW, Holland LJ. A longitudinal perspective on dating violence among adolescent and college-age women. *Am J Public Health*. 2003;93(7):1104–9.
6. Ipekten Alaman M, Yıldız H. Domestic sexual violence and sexual problems among gynecology outpatients: an example from Turkey. *Women Health*. 2014;54(5):439–54.
7. VanderEnde KE, Yount KM, Dynes MM, Sibley LM. Community-level correlates of intimate partner violence against women globally: A systematic review. *Soc Sci Med*. 2012;75(7):1143–55.
8. Kalra G, Bhugra D. Sexual violence against women: Understanding cross-cultural intersections. *Indian Journal of Psychiatry*. 2013;55(3):244–9.
9. WHO. **Preventing intimate partner and sexual violence against women: Taking action and generating evidence, Geneva.** In. Geneva, Switzerland: World Health Organization; 2010.
10. WHO. **Understanding and addressing violence against women: Intimate partner violence.** In. Geneva, Switzerland: World Health Organization; 2012.
11. Breiding MJ, Black MC, Ryan GW. Prevalence and risk factors of intimate partner violence in eighteen US states/territories, 2005. *Am J Prev Med*. 2008;34(2):112–8.
12. Bott S: **Sexual violence and coercion: implications for sexual and reproductive health.** In: *Social determinants of sexual and reproductive health: informing future research and programme implementation*. edn. Edited by Malarcher S. Geneva: World Health Organization; 2010: 133–157.
13. Rai R, Rai AK. Sexual violence and poor mental health of women: An exploratory study of Uttar Pradesh, India. *Clinical Epidemiology Global Health*. 2019;8(1):194–8.
14. Garcia-Moreno C. Dilemmas and opportunities for an appropriate health-service response to violence against women. *The Lancet*. 2002;359(9316):1509–14.
15. Gazmararian JA, Petersen R, Spitz AM, Goodwin MM, Saltzman LE, Marks JS. Violence and reproductive health: current knowledge and future research directions. *Matern Child Health J*. 2000;4(2):79–84.
16. Heise L, Ellsberg M, Gottemoeller M. Ending violence against women. *Population Reports*. 1999;27(4):1.

17. Erulkar AS. The experience of sexual coercion among young people in Kenya. *International Family Planning Perspectives*. 2004;30(4):182–9.
18. WHO. **Respect Women: Preventing Violence against Women**. In. Geneva. Switzerland: World Health Organization; 2019.
19. RapeStatistics. **Rape Statistics By Country Population**. 2019.
20. Kocacik F, Dogan O. Domestic violence against women in Sivas, Turkey: survey study. *Croatian Medical Journal*. 2006;47(5):742–9.
21. Alikasifoglu M, Erginoz E, Ercan O, Albayrak-Kaymak D, Uysal O, Ilter O. Sexual abuse among female high school students in Istanbul, Turkey. *Child Abuse Neglect*. 2006;30(3):247–55.
22. Akar T, Aksakal FN, Demirel B, Durukan E, Özkan S. The prevalence of domestic violence against women among a group woman: Ankara, Turkey. *Journal of Family Violence*. 2010;25(5):449–60.
23. Yüksel-Kaptanoğlu İ, Türkyılmaz AS, Heise L. What puts women at risk of violence from their husbands? Findings from a large, nationally representative survey in Turkey. *Journal of Interpersonal Violence*. 2012;27(14):2743–69.
24. Lüleci NE, Kaya E, Aslan E, Şenkal ES, Çiçek ZN. Marmara University medical students' perception on sexual violence against women and induced abortion in Turkey. *Balkan Medical Journal*. 2016;33(2):173–80.
25. **Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması Mikro Veri Seti**  
[http://www.tuik.gov.tr/MicroVeri/KYAS\\_2008/metaveri/yontem/index.html](http://www.tuik.gov.tr/MicroVeri/KYAS_2008/metaveri/yontem/index.html).
26. **Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması, 2014 Mikro Veri Seti**  
[http://www.tuik.gov.tr/MicroVeri/KYAS\\_2014/metaveri/kapsam/index.html](http://www.tuik.gov.tr/MicroVeri/KYAS_2014/metaveri/kapsam/index.html).
27. Alkan Ö, Oktay E, Genç A. Determination of factors affecting the children's internet use. *American International Journal of Contemporary Research*. 2015;5(6):57–67.
28. Bilenkisi F, Gungor MS, Tapsin G. The Impact of Household Heads' Education Levels on the Poverty Risk: The Evidence from Turkey. *Educational Sciences: Theory Practice*. 2015;15(2):337–48.
29. Alkan O, Oktay E, Unver S, Gerni E. Determination of Factors Affecting the Financial Literacy of University Students in Eastern Anatolia using Ordered Regression Models. *Asian Economic Financial Review*. 2020;10(5):536–46.
30. Uthman OA, Lawoko S, Moradi T. Factors associated with attitudes towards intimate partner violence against women: a comparative analysis of 17 sub-Saharan countries. *BMC International Health Human Rights*. 2009;9(1):14.
31. Ragetlie R, Sano Y, Antabe R, Luginaah I. **Married women's experiences of intimate partner violence and utilization of antenatal health care in Togo**. *Sexual & Reproductive Healthcare* 2020, 23.
32. Siddique JA. Age, marital status, and risk of sexual victimization: Similarities and differences across victim-offender relationships. *Journal of Interpersonal Violence*. 2016;31(15):2556–75.
33. Acierno R, Resnick H, Kilpatrick DG, Saunders B, Best CL. Risk factors for rape, physical assault, and posttraumatic stress disorder in women: Examination of differential multivariate relationships. *J Anxiety Disord*. 1999;13(6):541–63.
34. Atteraya MS, Gnawali S, Song IH. Factors associated with intimate partner violence against married women in Nepal. *Journal of Interpersonal Violence*. 2015;30(7):1226–46.

35. Djikanovic B, Jansen HA, Otasevic S. Factors associated with intimate partner violence against women in Serbia: a cross-sectional study. *Journal of Epidemiology Community Health*. 2010;64(8):728–35.
36. Rao S: **A natural disaster and intimate partner violence: Evidence over time**. *Social Science & Medicine* 2020.
37. Watts C, Keogh E, Ndlovu M, Kwaramba R. Withholding of sex and forced sex: dimensions of violence against Zimbabwean women. *Reproductive Health Matters*. 1998;6(12):57–65.
38. Hayati EN, Högberg U, Hakimi M, Ellsberg MC, Emmelin M. Behind the silence of harmony: risk factors for physical and sexual violence among women in rural Indonesia. *BMC Women's Health*. 2011;11:52.
39. Banarjee S. **Identifying factors of sexual violence against women and protection of their rights in Bangladesh**. *Aggression and Violent Behavior* 2020.
40. Coker AL, Smith PH, McKeown RE, King MJ. Frequency and correlates of intimate partner violence by type: physical, sexual, and psychological battering. *Am J Public Health*. 2000;90(4):553–9.
41. Grisso JA, Schwarz DF, Hirschinger N, Sammel M, Brensinger C, Santanna J, Lowe RA, Anderson E, Shaw LM, Bethel CA. Violent injuries among women in an urban area. *N Engl J Med*. 1999;341(25):1899–905.
42. Jansen HA, Nguyen TVN, Hoang TA. Exploring risk factors associated with intimate partner violence in Vietnam: results from a cross-sectional national survey. *International Journal of Public Health*. 2016;61(8):923–34.
43. Jewkes R. Intimate partner violence: causes and prevention. *The Lancet*. 2002;359(9315):1423–9.